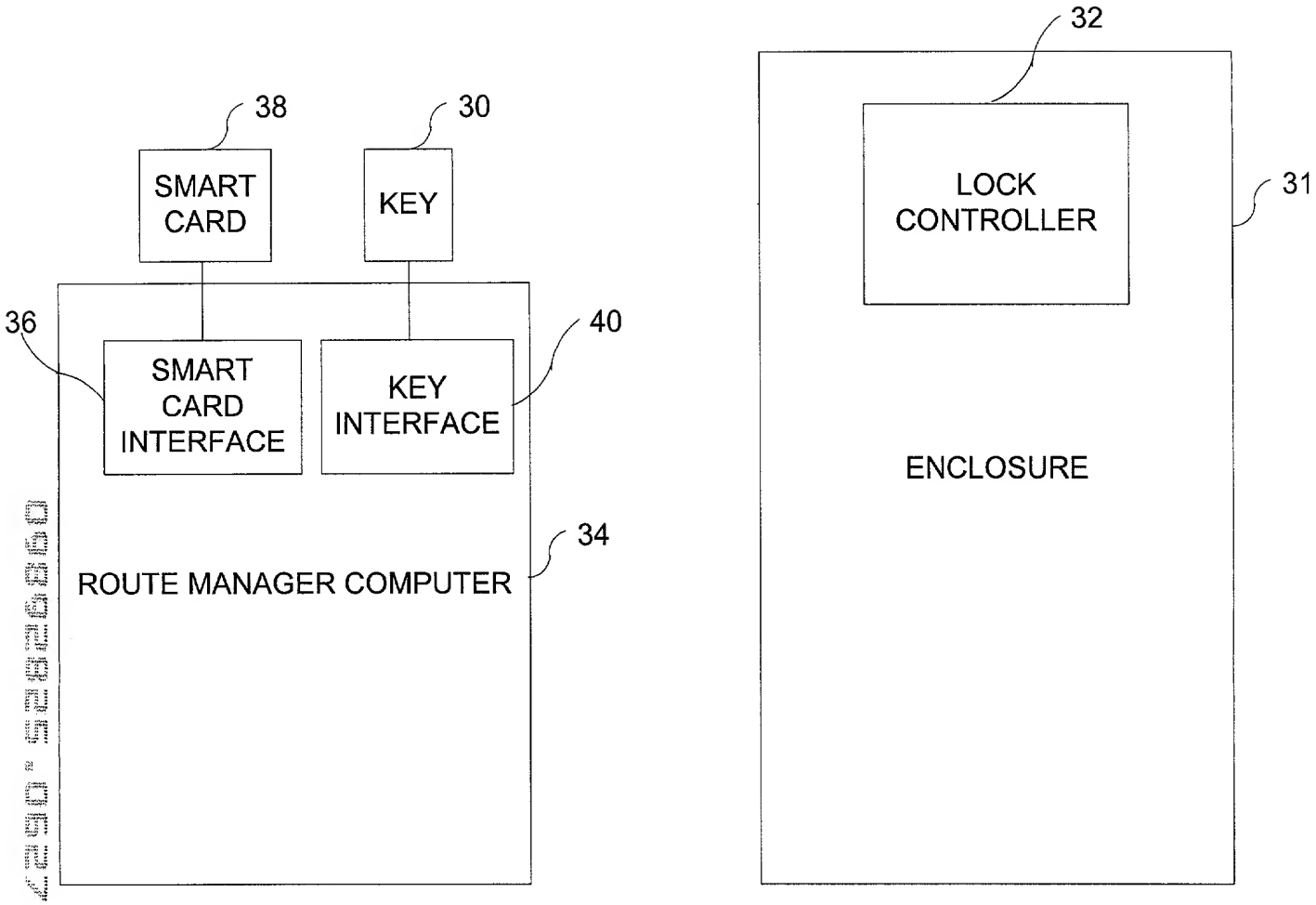

38
30
SMART CARD
KEY
36
40
SMART CARD INTERFACE
KEY INTERFACE
34
ROUTE MANAGER COMPUTER
32
LOCK CONTROLLER
31
ENCLOSURE

FIG. 1

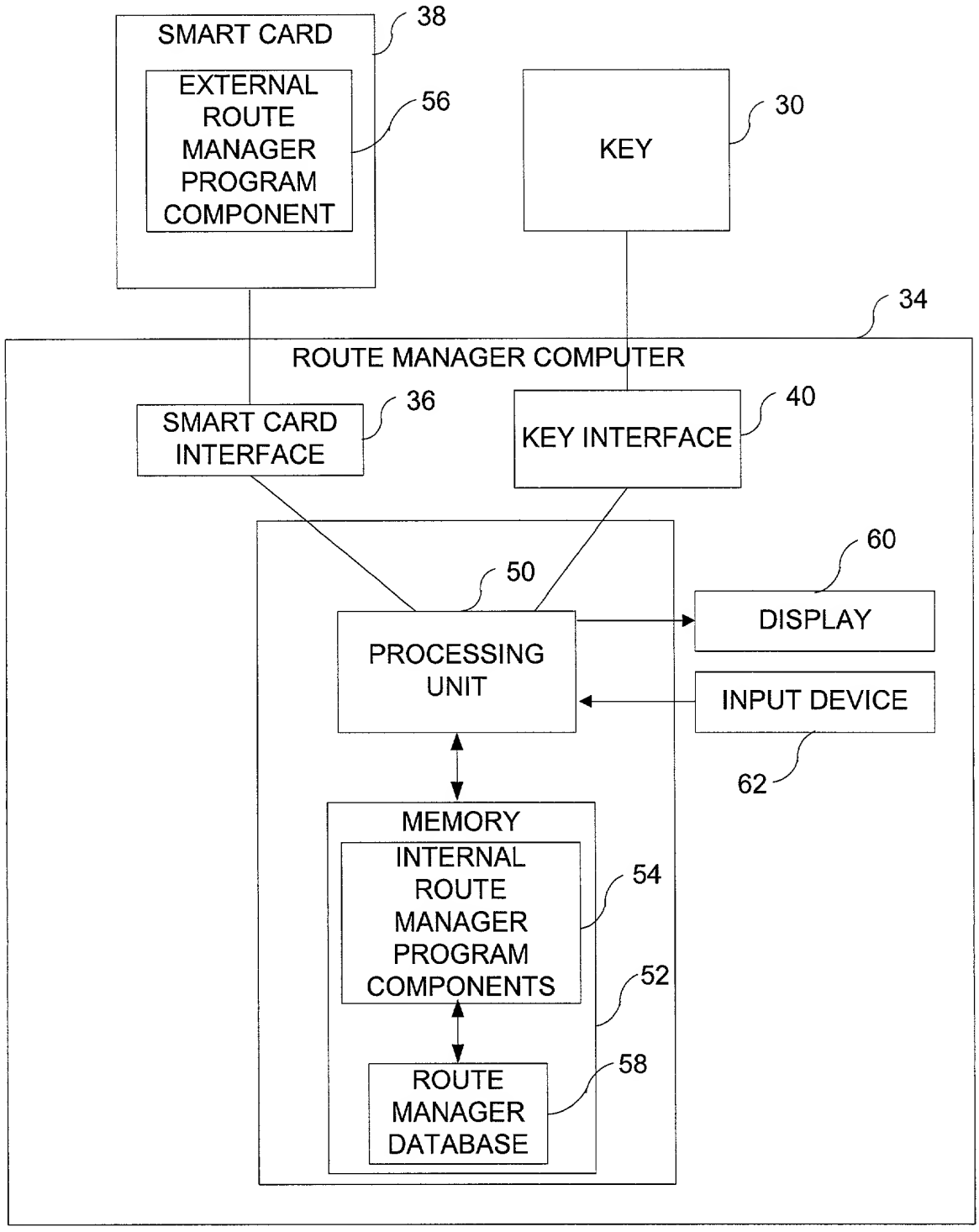

SMART CARD
38
EXTERNAL ROUTE MANAGER PROGRAM COMPONENT
56
KEY
30
34
ROUTE MANAGER COMPUTER
SMART CARD INTERFACE
36
KEY INTERFACE
40
50
PROCESSING UNIT
60
DISPLAY
INPUT DEVICE
62
MEMORY
INTERNAL ROUTE MANAGER PROGRAM COMPONENTS
54
52
ROUTE MANAGER DATABASE
58

FIG. 2

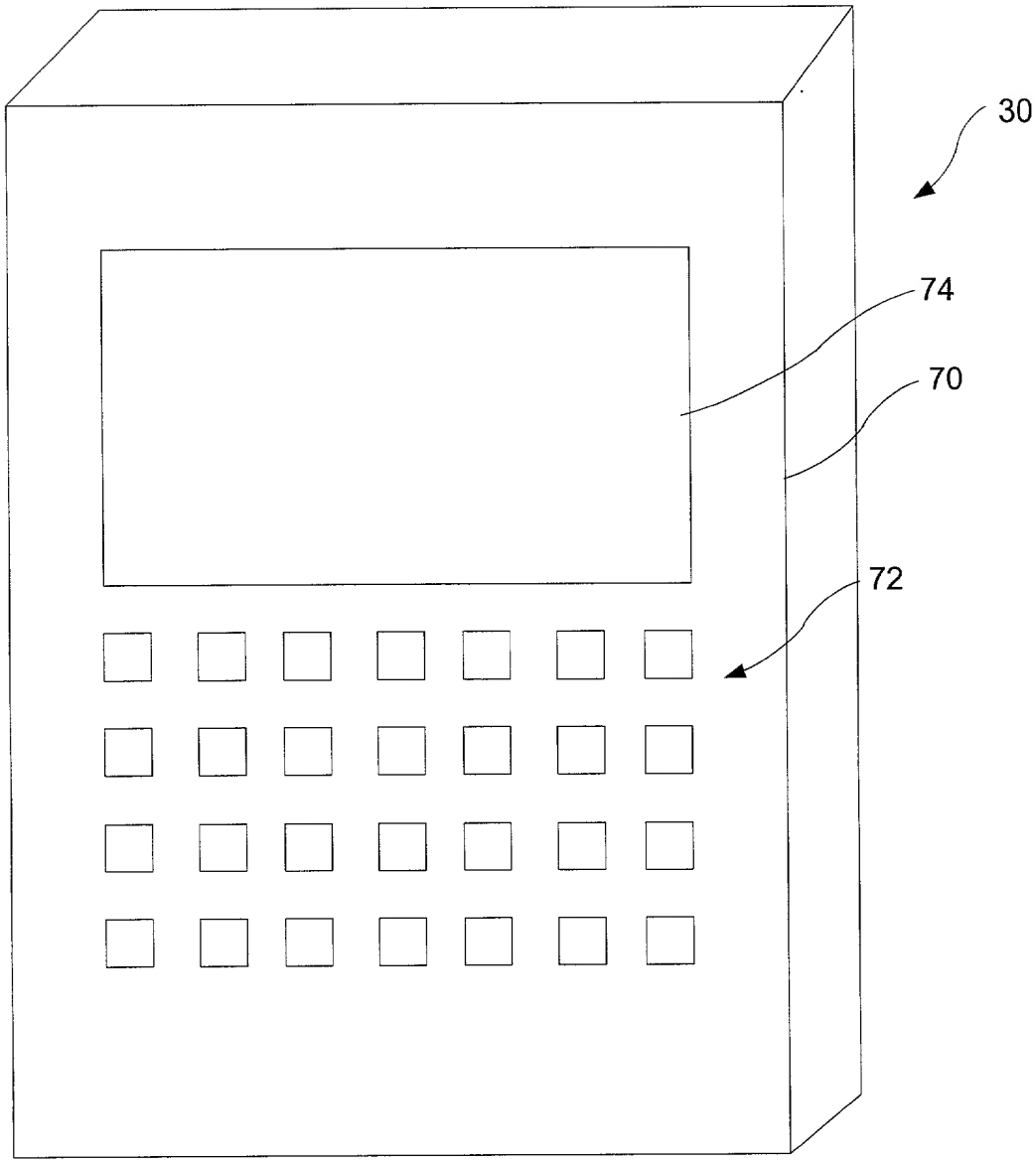


FIG. 3

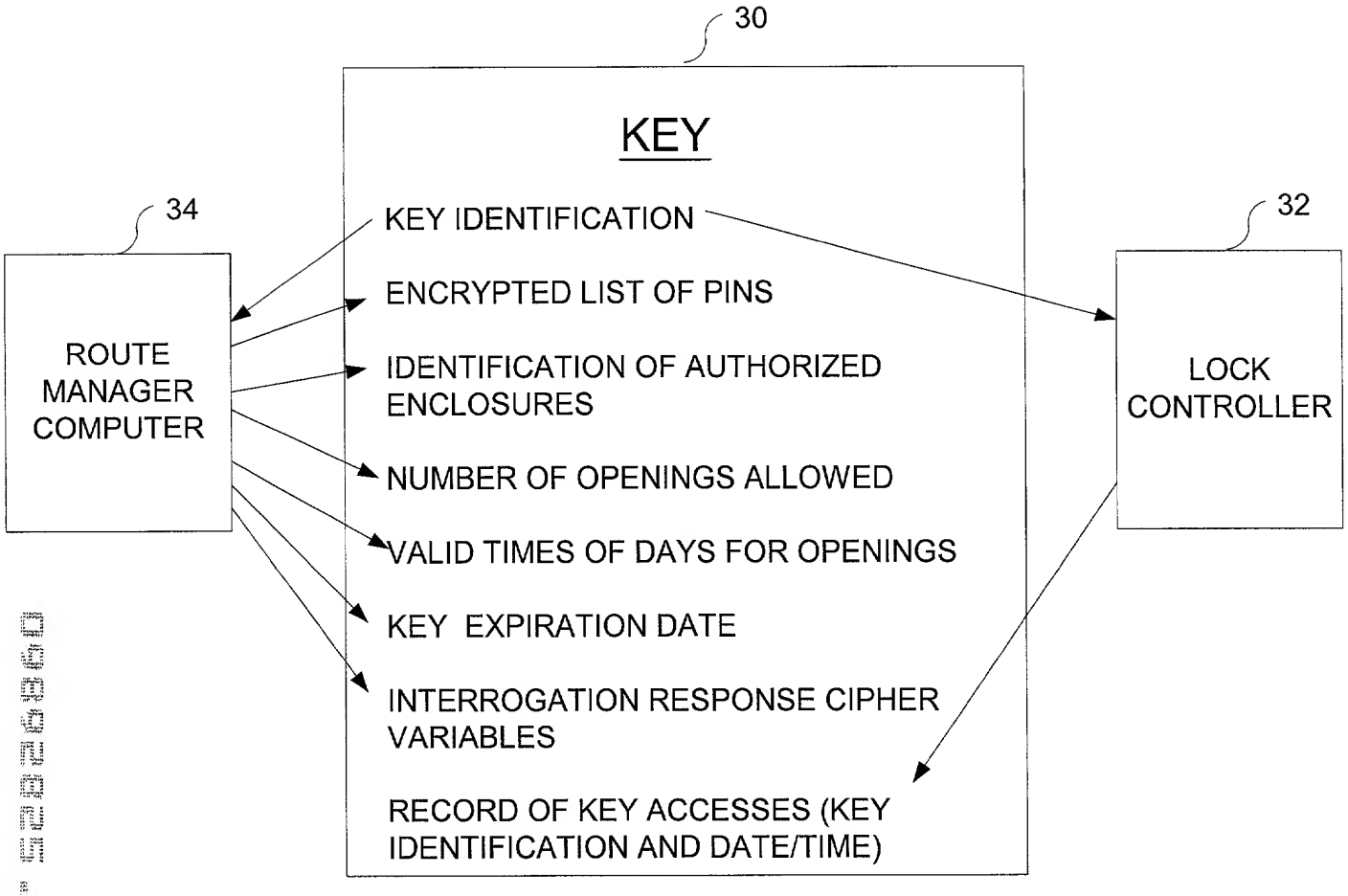

30
KEY
34
KEY IDENTIFICATION
32
ROUTE MANAGER COMPUTER
ENCRYPTED LIST OF PINS
IDENTIFICATION OF AUTHORIZED ENCLOSURES
LOCK CONTROLLER
NUMBER OF OPENINGS ALLOWED
VALID TIMES OF DAYS FOR OPENINGS
KEY EXPIRATION DATE
INTERROGATION RESPONSE CIPHER VARIABLES
RECORD OF KEY ACCESSES (KEY IDENTIFICATION AND DATE/TIME)

FIG. 4

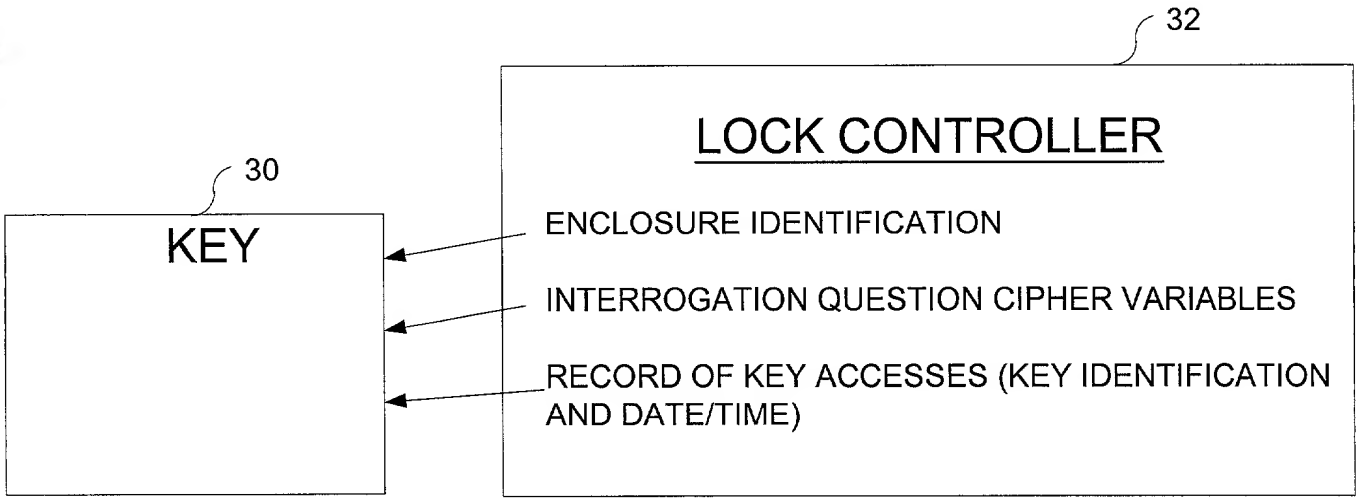

32
LOCK CONTROLLER
30
KEY
ENCLOSURE IDENTIFICATION
INTERROGATION QUESTION CIPHER VARIABLES
RECORD OF KEY ACCESSES (KEY IDENTIFICATION AND DATE/TIME)

FIG. 5

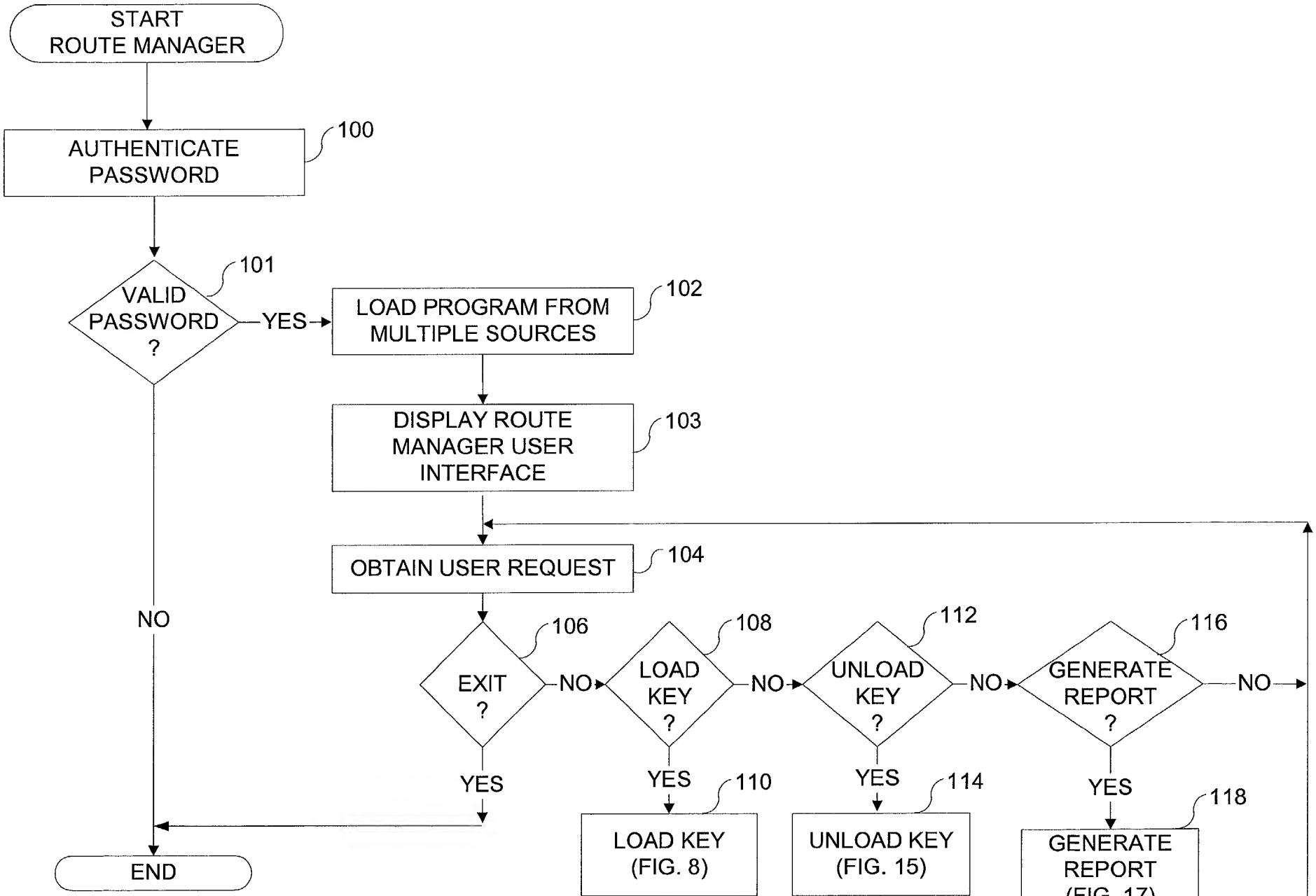

START ROUTE MANAGER
AUTHENTICATE PASSWORD
100
VALID PASSWORD ?
101
YES
NO
LOAD PROGRAM FROM MULTIPLE SOURCES
102
DISPLAY ROUTE MANAGER USER INTERFACE
103
OBTAIN USER REQUEST
104
EXIT ?
106
NO
YES
LOAD KEY ?
108
NO
YES
LOAD KEY (FIG. 8)
110
UNLOAD KEY ?
112
NO
YES
UNLOAD KEY (FIG. 15)
114
GENERATE REPORT ?
116
NO
YES
GENERATE REPORT (FIG. 17)
118
END

FIG. 6

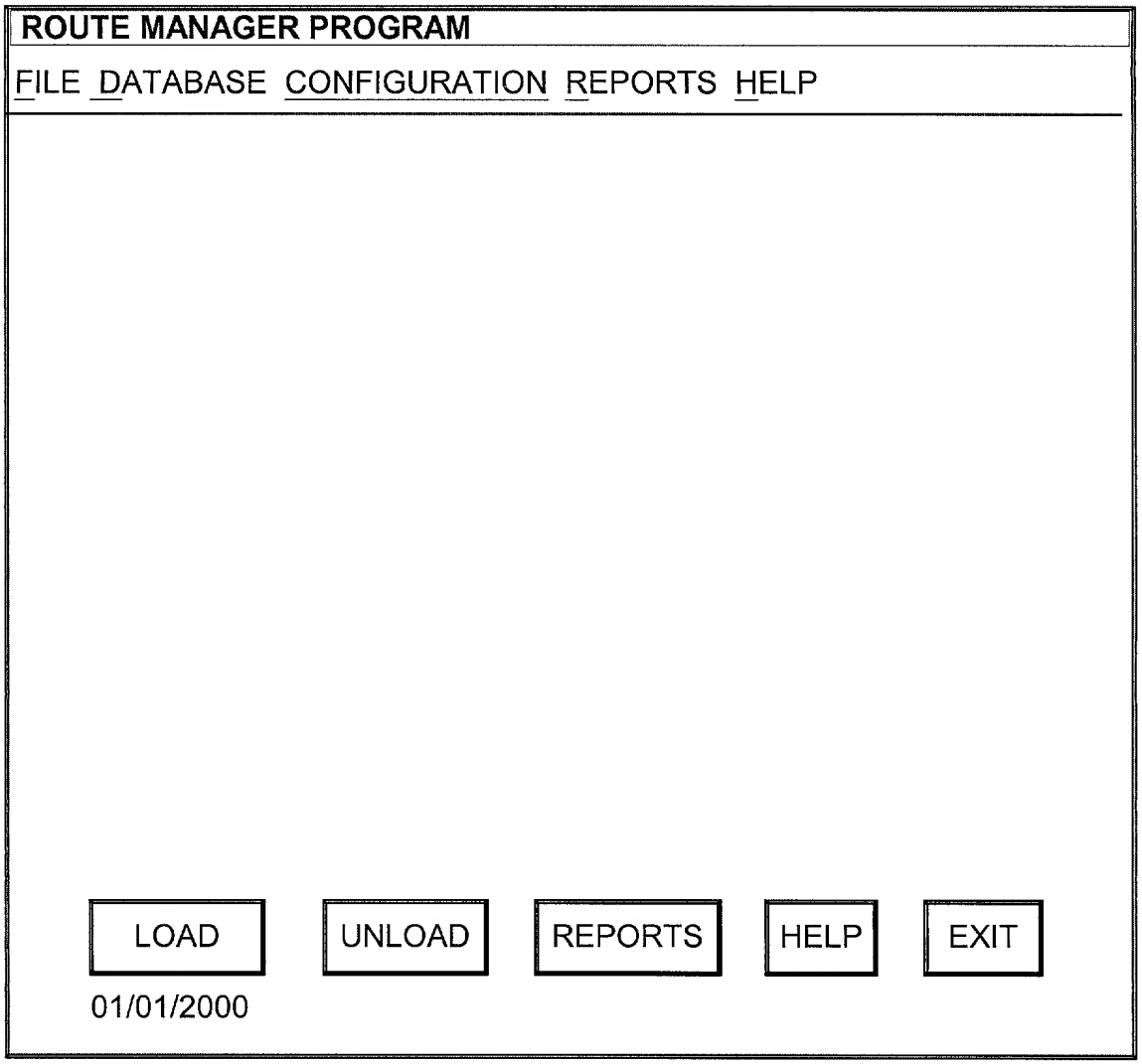

ROUTE MANAGER PROGRAM
FILE DATABASE CONFIGURATION REPORTS HELP
LOAD
UNLOAD
REPORTS
HELP
EXIT
01/01/2000

FIG. 7

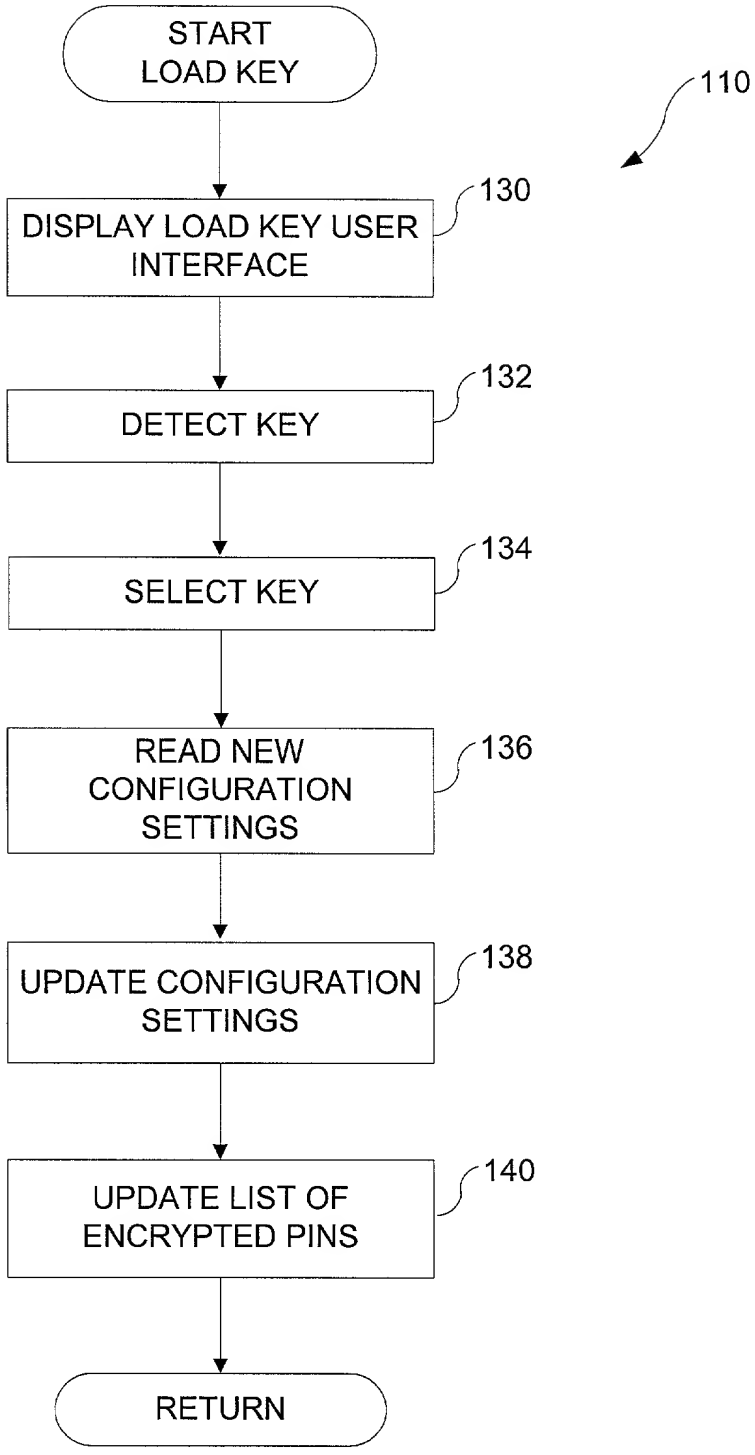

START
LOAD KEY
110
DISPLAY LOAD KEY USER INTERFACE
130
DETECT KEY
132
SELECT KEY
134
READ NEW CONFIGURATION SETTINGS
136
UPDATE CONFIGURATION SETTINGS
138
UPDATE LIST OF ENCRYPTED PINS
140
RETURN

FIG. 8

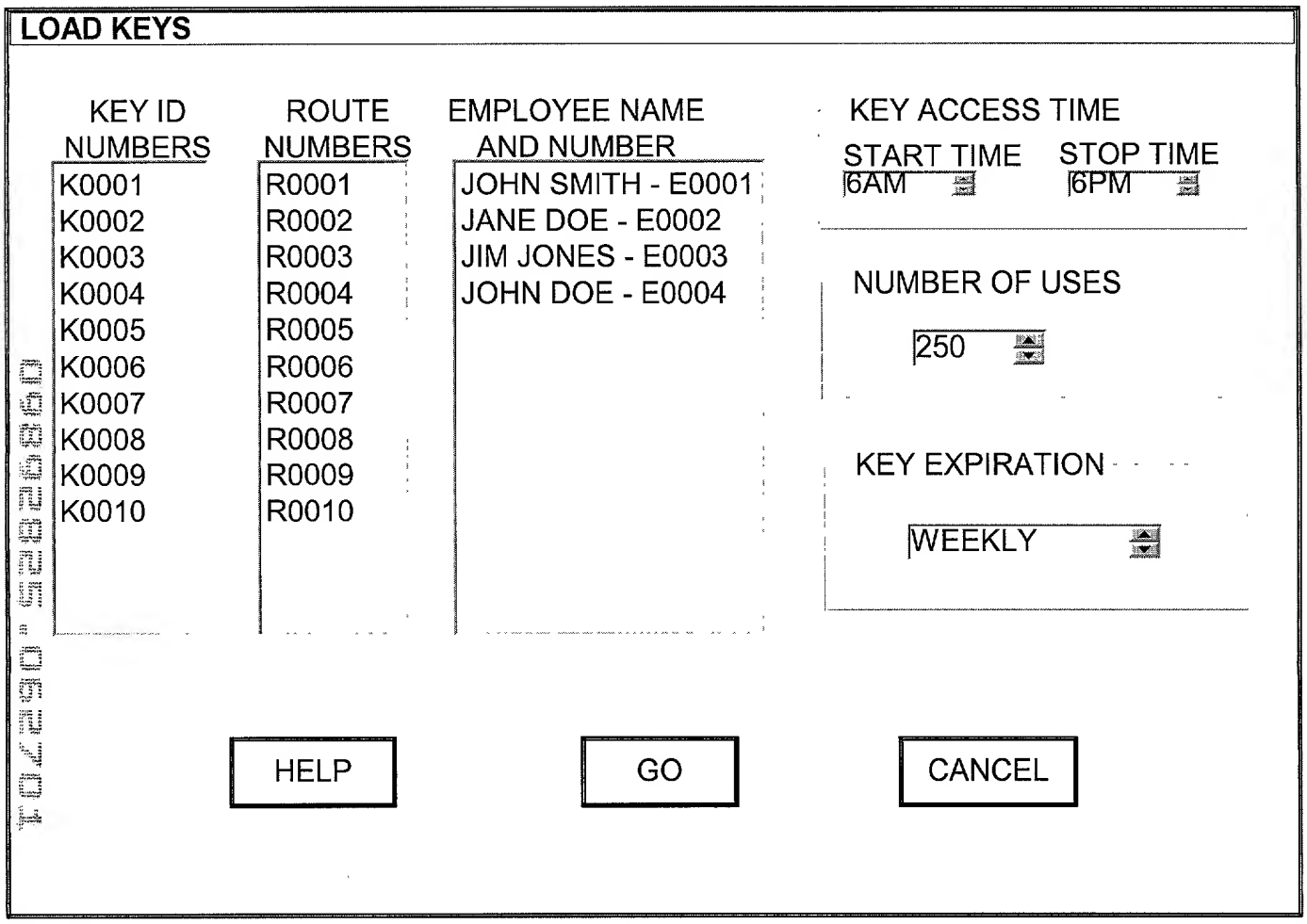

LOAD KEYS
KEY ID NUMBERS
K0001
K0002
K0003
K0004
K0005
K0006
K0007
K0008
K0009
K0010
ROUTE NUMBERS
R0001
R0002
R0003
R0004
R0005
R0006
R0007
R0008
R0009
R0010
EMPLOYEE NAME AND NUMBER
JOHN SMITH - E0001
JANE DOE - E0002
JIM JONES - E0003
JOHN DOE - E0004
KEY ACCESS TIME
START TIME
6AM
STOP TIME
6PM
NUMBER OF USES
250
KEY EXPIRATION
WEEKLY
HELP
GO
CANCEL

FIG. 9

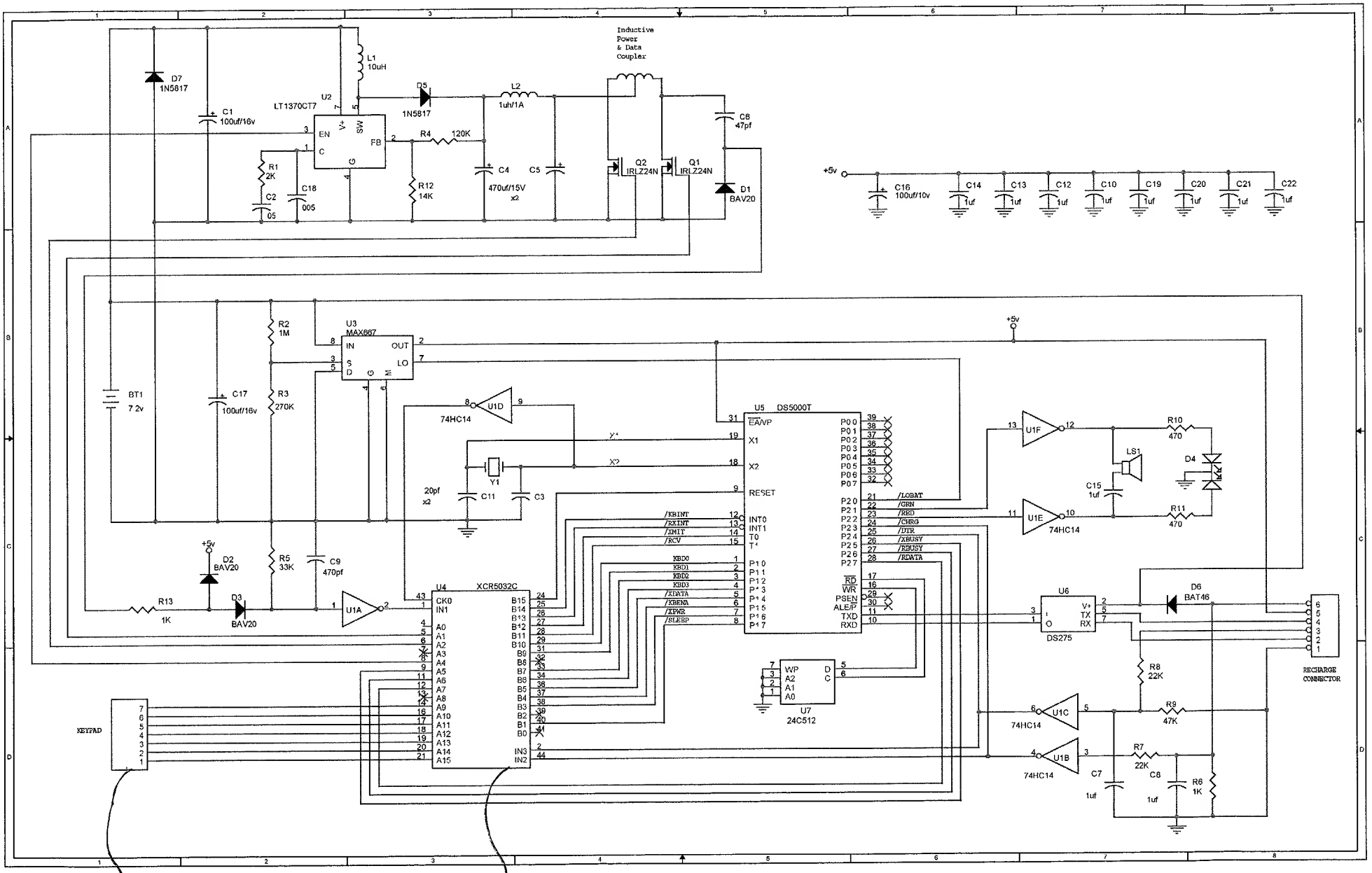

Inductive
Power
& Data
Coupler
D7
1N5817
C1
100uf/16v
U2
LT1370CT7
L1
10uH
D5
1N5817
L2
1uh/1A
C6
47pf
R1
2K
C2
.05
C18
.005
R4
120K
R12
14K
C4
470uf/15V
x2
C5
Q2
IRLZ24N
Q1
IRLZ24N
D1
BAV20
+5v
C16
100uf/10v
C14
1uf
C13
1uf
C12
1uf
C10
1uf
C19
1uf
C20
1uf
C21
1uf
C22
1uf
R2
1M
U3
MAX667
BT1
7.2v
C17
100uf/16v
R3
270K
U1D
74HC14
U5 DS5000T
Y1
20pf
x2
C11
C3
D2
BAV20
R5
33K
C9
470pf
R13
1K
D3
BAV20
U1A
U4
XCR5032C
KEYPAD
U7
24C512
U1F
U1E
74HC14
R10
470
LS1
D4
C15
1uf
R11
470
U6
DS275
D6
BAT46
RECHARGE
CONNECTOR
R8
22K
U1C
74HC14
R9
47K
U1B
74HC14
R7
22K
C7
1uf
C8
1uf
R6
1K
82
80

Fig. 10

PO/2250-5228269360

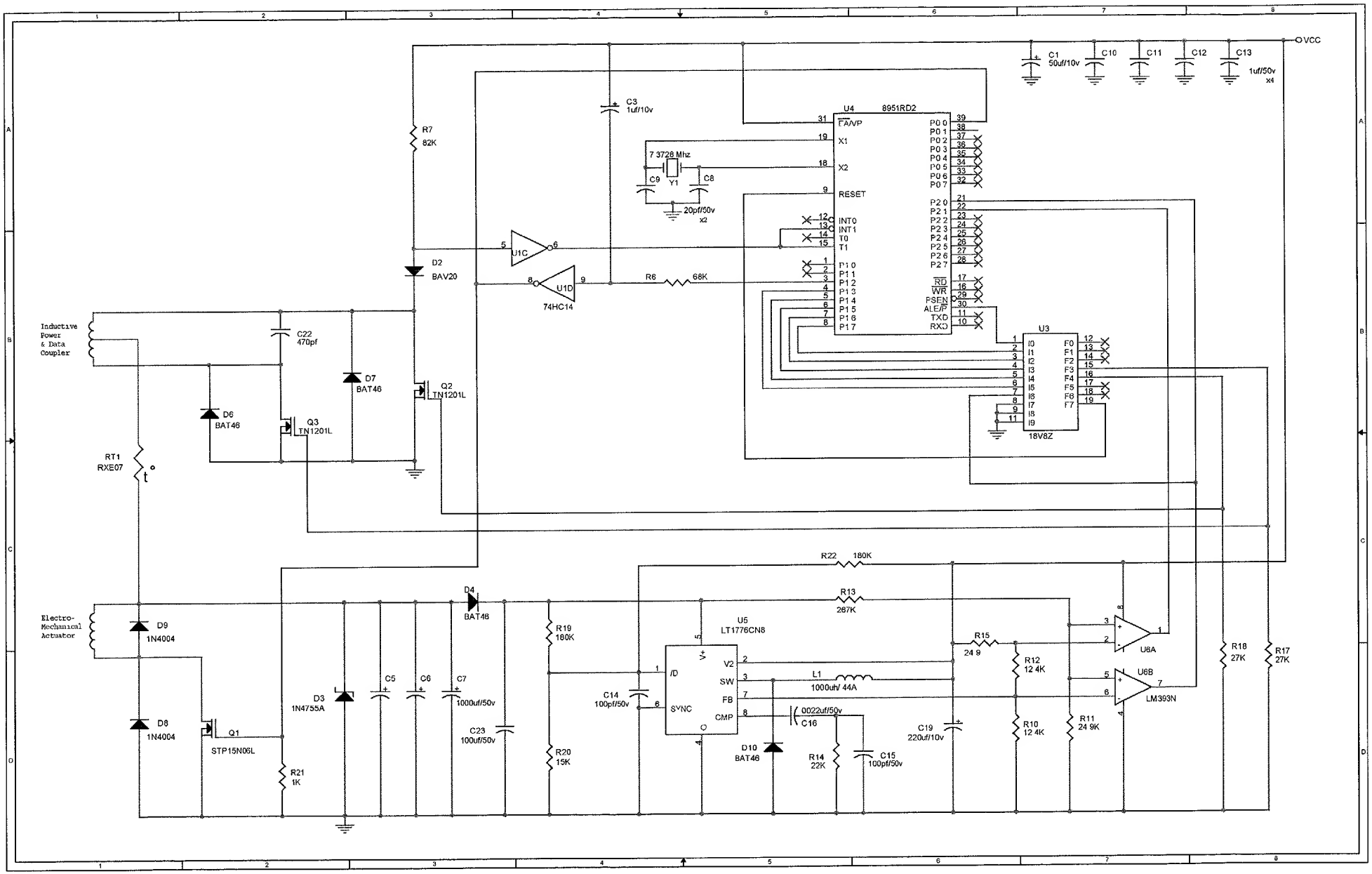


FIG. 11

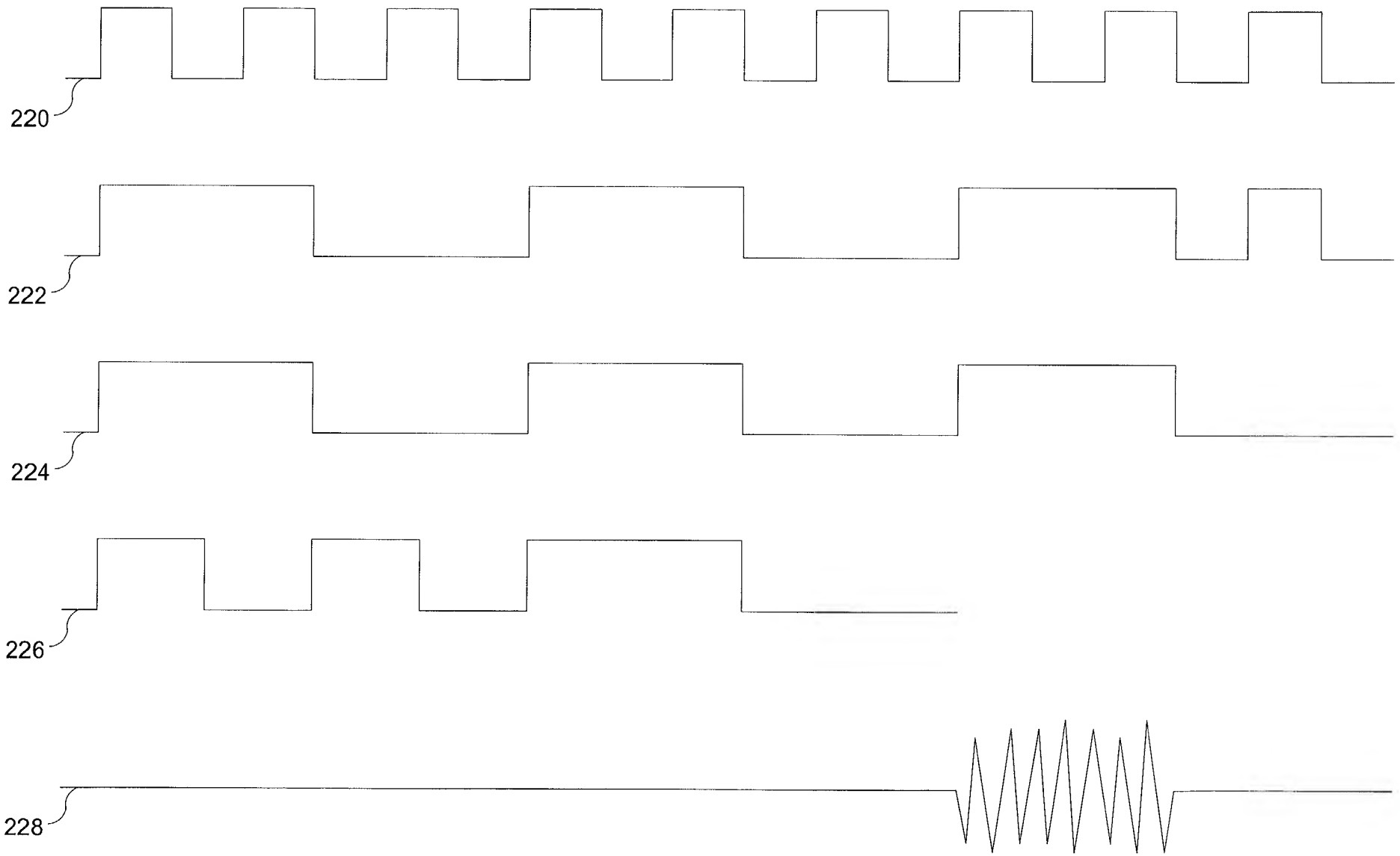


FIG. 12

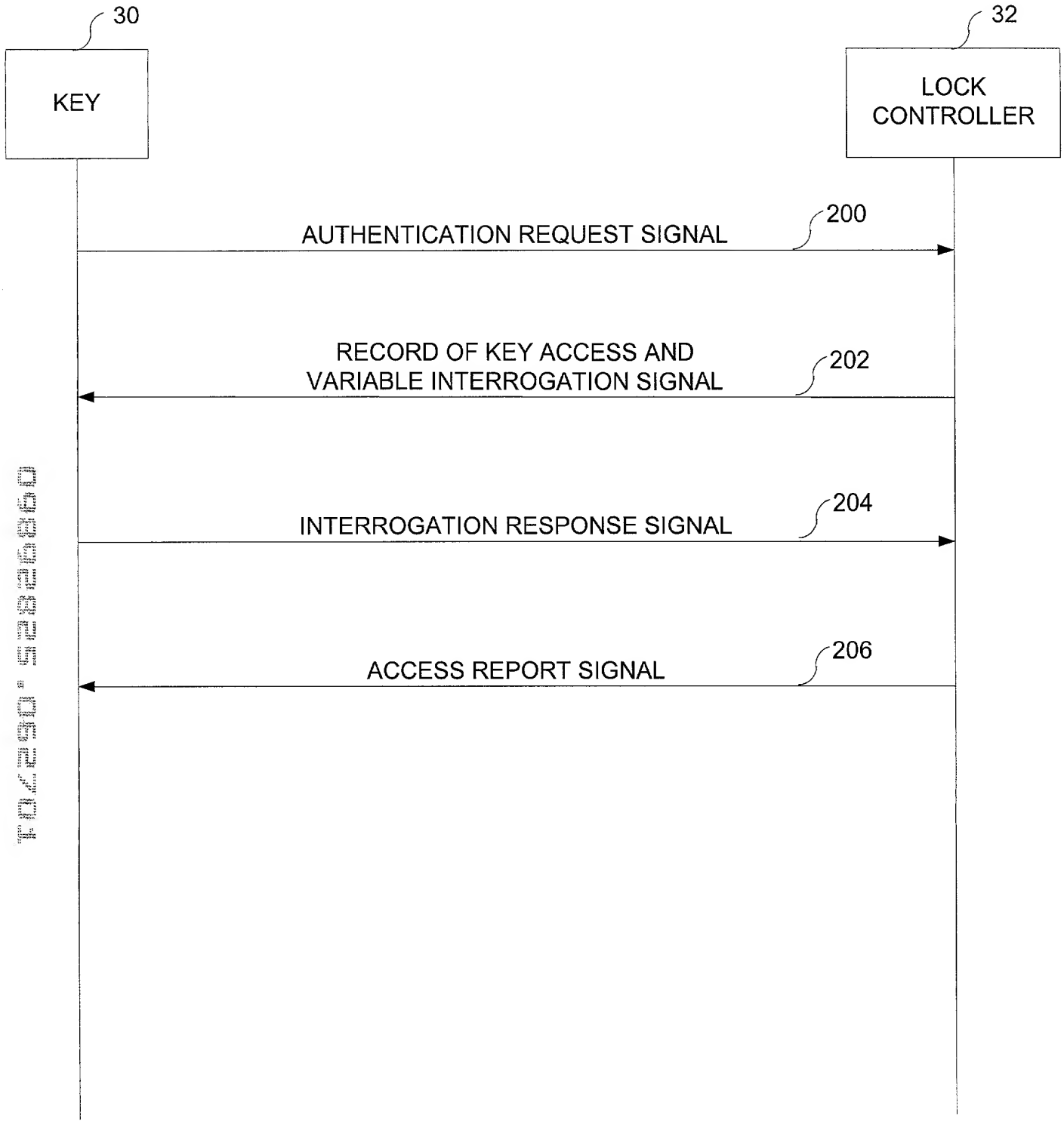
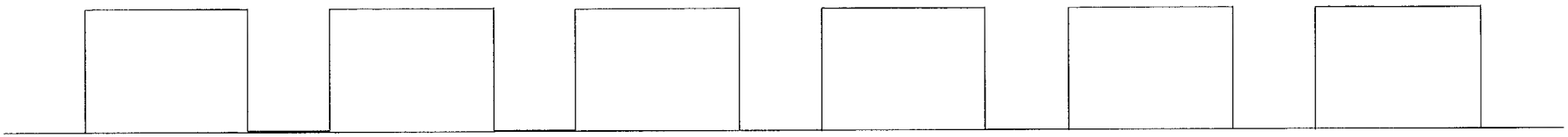

30
KEY
32
LOCK CONTROLLER
AUTHENTICATION REQUEST SIGNAL
200
RECORD OF KEY ACCESS AND VARIABLE INTERROGATION SIGNAL
202
INTERROGATION RESPONSE SIGNAL
204
ACCESS REPORT SIGNAL
206

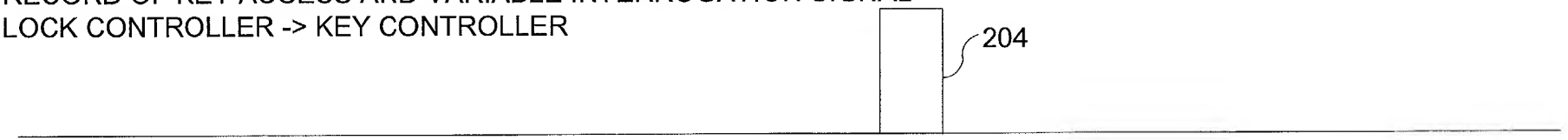
FIG. 13



POWER
KEY CONTROLLER -> LOCK CONTROLLER

AUTHENTICATION REQUEST SIGNAL
KEY CONTROLLER -> LOCK CONTROLLER

RECORD OF KEY ACCESS AND VARIABLE INTERROGATION SIGNAL
LOCK CONTROLLER -> KEY CONTROLLER



INTERROGATION RESPONSE SIGNAL
KEY CONTROLLER -> LOCK CONTROLLER

ACCESS REPORT SIGNAL
LOCK CONTROLLER -> KEY CONTROLLER

FIG. 14

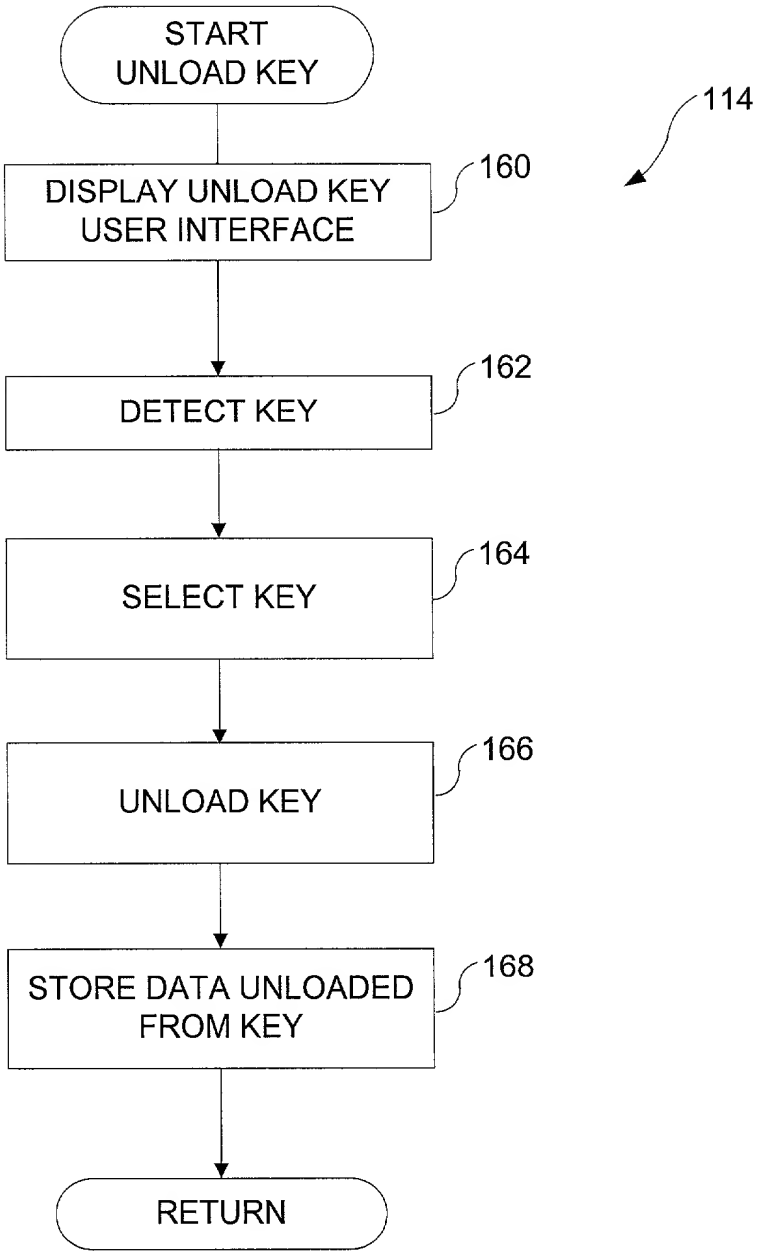

START
UNLOAD KEY
114
DISPLAY UNLOAD KEY
USER INTERFACE
160
DETECT KEY
162
SELECT KEY
164
UNLOAD KEY
166
STORE DATA UNLOADED
FROM KEY
168
RETURN

FIG. 15

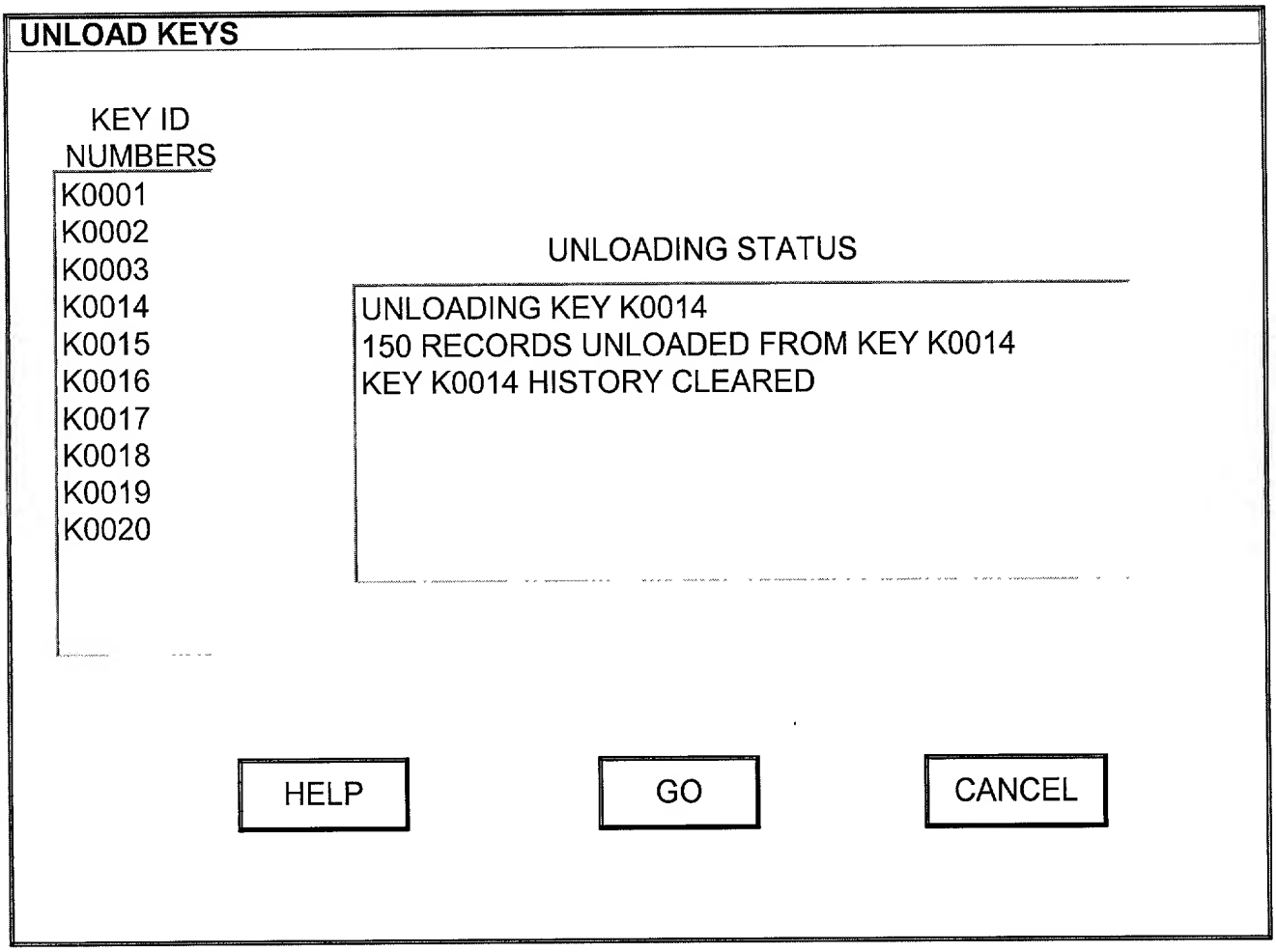

UNLOAD KEYS
KEY ID NUMBERS
K0001
K0002
K0003
K0014
K0015
K0016
K0017
K0018
K0019
K0020
UNLOADING STATUS
UNLOADING KEY K0014
150 RECORDS UNLOADED FROM KEY K0014
KEY K0014 HISTORY CLEARED
HELP
GO
CANCEL

FIG. 16

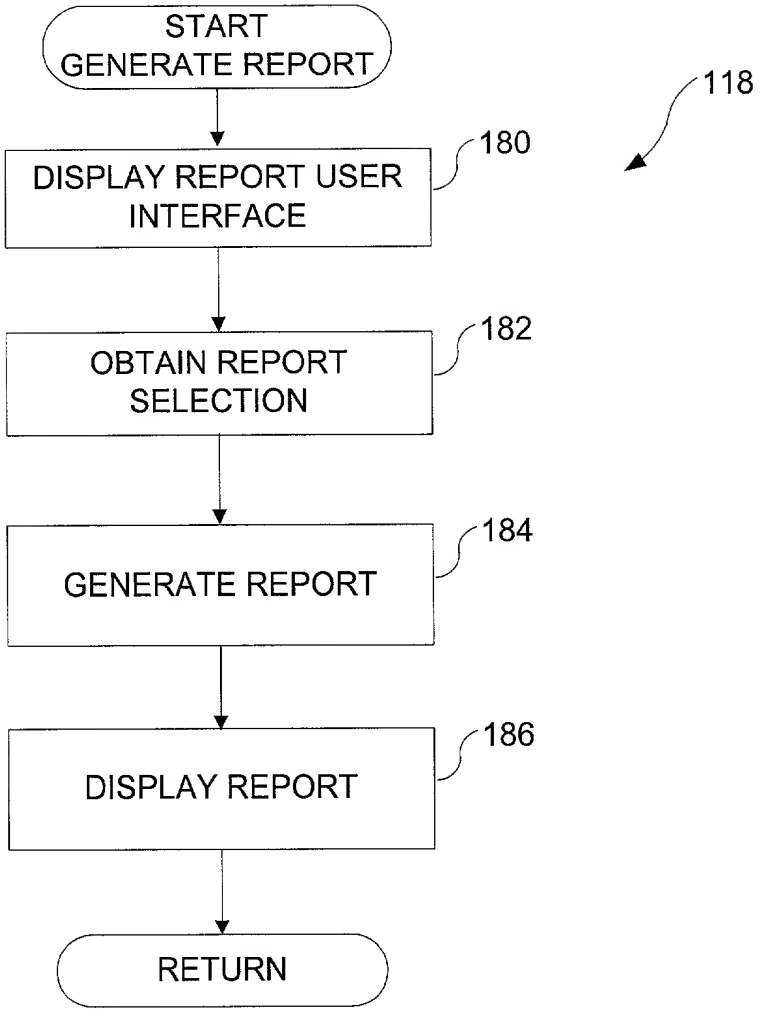

START
GENERATE REPORT
118
180
DISPLAY REPORT USER INTERFACE
182
OBTAIN REPORT SELECTION
184
GENERATE REPORT
186
DISPLAY REPORT
RETURN

FIG. 17

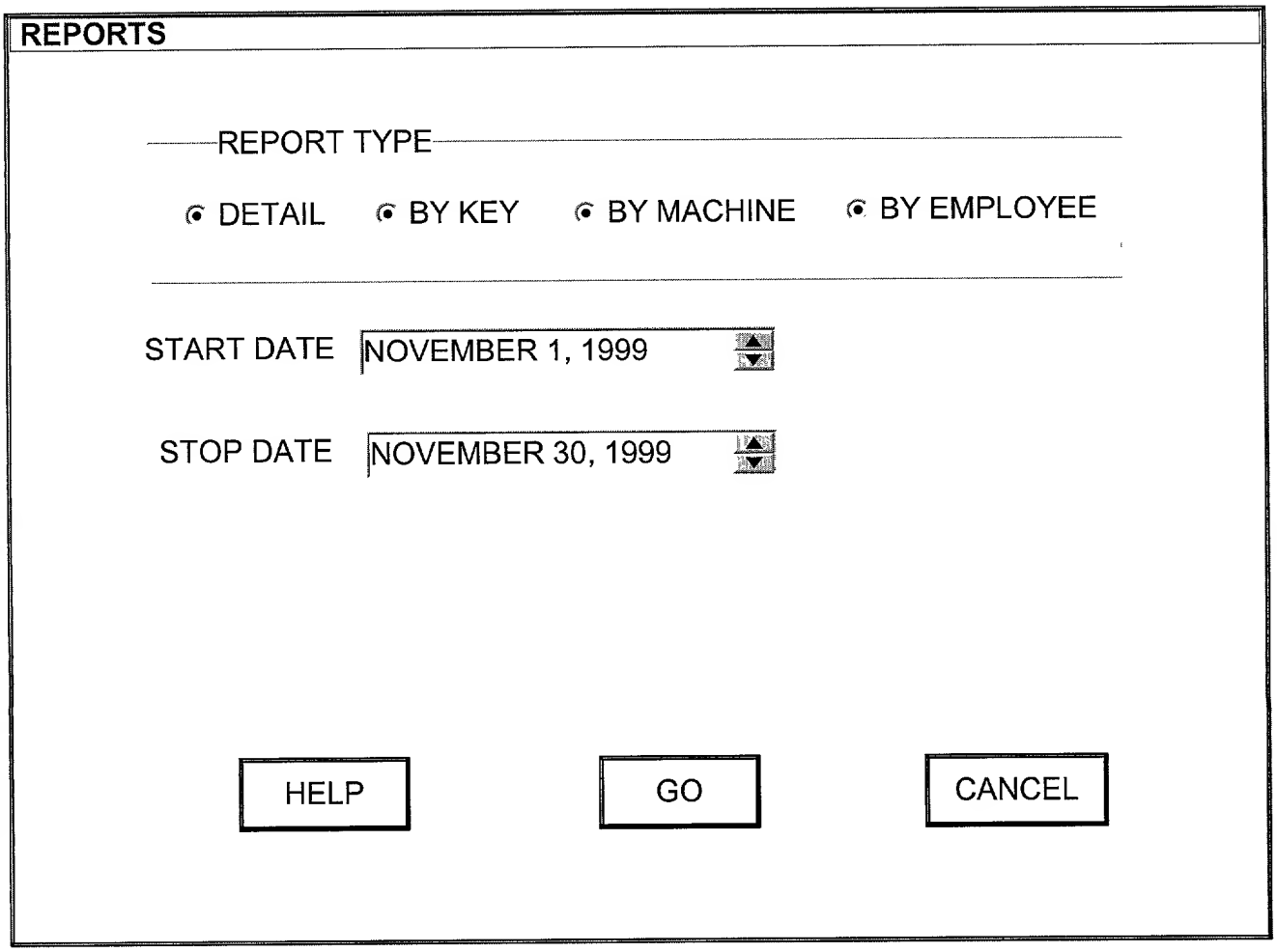

REPORTS
REPORT TYPE
DETAIL
BY KEY
BY MACHINE
BY EMPLOYEE
START DATE
NOVEMBER 1, 1999
STOP DATE
NOVEMBER 30, 1999
HELP
GO
CANCEL

FIG. 18

REPORTS

DATE	MACHINE ASSET NUMBER	EMP. NUMBER	KEY ID	TIME
11/07/99	SC32014424	E0004	K0001	08:22:00 AM
11/08/99	SC32014424	E0004	K0001	08:22:00 AM
11/09/99	SC32014424	E0004	K0001	06:33:00 AM
11/10/99	SC32014424	E0004	K0001	03:55:00 AM
11/11/99	SC32014424	E0004	K0001	06:55:00 AM
11/07/99	SC32014425	E0003	K0002	10:33:00 AM
11/08/99	SC32014425	E0003	K0002	10:33:00 AM
11/09/99	SC32014425	E0003	K0002	05:22:00 AM
11/10/99	SC32014425	E0003	K0002	12:45:00 PM
11/11/99	SC32014425	E0003	K0002	05:22:00 AM
11/07/99	SC32014426	E0002	K0003	03:20:00 AM
11/08/99	SC32014426	E0002	K0003	09:55:00 AM
11/09/99	SC32014426	E0002	K0003	09:55:00 AM
11/10/99	SC32014426	E0002	K0003	04:55:00 AM
11/11/99	SC32014426	E0002	K0003	04:33:00 AM
11/07/99	SC32014427	E0001	K0004	06:30:00 AM
11/08/99	SC32014427	E0001	K0004	01:55:00 AM
11/09/99	SC32014427	E0001	K0004	06:47:00 AM
11/10/99	SC32014427	E0001	K0004	06:22:00 AM

CLOSE

PRINT

FIG. 19